

Food as Fuel

By Whitney Zola Mendoza

Imagine a world where people are no longer dependent on gas, a world with cars that release oxygen instead of spouting carbon monoxide, bettering the quality of the air we breathe. Sounds too good to be true? Well, it isn't. Due to new advances in environmental sciences, it is now possible to turn Mother Nature's gifts such as crops and sunlight into energy to be used in everything from household items to cars. This type of energy is renewable and is sometimes called "clean energy" or "green power" because it usually produces less pollution. Furthermore, we can use **renewable energy** over and over again, it does not run out.

So why should we use renewable energy? When energy is made using non-renewable fuels, also called **fossil fuels**, such as gas, oil and coal, the air and water on earth become polluted. This causes something scientists call the "**greenhouse effect**" since it is similar to what happens to a greenhouse on a hot day. If it is sunny outside and you walk into a greenhouse, chances are it will be very hot inside. This is because the sun's heat gets trapped inside the greenhouse. Fossil fuels that release carbon into the air have the same effect on the Earth as the glass on the greenhouse – trapping heat inside the Earth's atmosphere. This is called "**global warming**". Because of the greenhouse effect the Earth is becoming warmer than it should be, causing ice all over the world to melt. This then causes the sea level to rise and jeopardizes people's homes, not to mention the many animals that depend on the ice and land to survive. Another negative affect of global warming is extreme weather like hurricanes, tornadoes, blizzards, floods, and droughts. By using renewable energy instead of fossil fuels, we can reduce the amount of pollution released into the air – lessening the effect of global warming.

Renewable energy is exactly what it sounds like – energy from a source that is reusable. Renewable energy comes in several different forms and uses only natural resources to create power. The types of renewable energy that are used most often are biomass, solar energy,



Ethanol production plant utilizing corn as a feed stock, located in South Dakota

hydropower, and wind energy. In this article we will focus on biomass as a renewable energy source because **biomass** comes from plants, and sometimes plants we eat like corn, soybeans, and sugar cane.

Biomass uses natural materials such as wood or plants and waste products like trash and cow manure to make energy. Biomass can produce energy by grinding up plants so that they release sugar which is then used to make fuel like

ethanol or biodiesel, and these are usually used as replacements for gas. Although great to use, biomass does have its downside. Burning wood as biomass can release carbon monoxide, and biodiesel can release nitrogen oxide into the air, both of which are harmful to the earth's atmosphere.

Recently scientists have conducted a study to see if using biomass for fuel is really better for our environment than using fossil fuels. One study found that it can actually make our planet more polluted to use certain types of biomass. The reason is that when scientists calculated the benefits of biomass as fuel, they forgot to figure out how much carbon was released into the air as lands are cleared for crops to grow. When we clear land to grow crops for biomass, especially land such as rain forest, more carbon is released into the air, much more than what we would save by planting crops on the land to harvest for biomass.

Some crops are still more energy efficient than others and the benefits of using them for fuel is great, but not all crops are energy efficient. Corn and soybeans are some of the least efficient crops grown for fuel. In many cases it takes more fuel to grow those crops than the fuel they can produce. Sugarcane is one of the most efficient sources of biofuel.

There is a lot of research that needs to be done in regards to renewable energy. Maybe you will be the next scientist to discover a new source of renewable energy that is efficient and not harmful to our planet. Until then, we need to make sure to keep researching and developing new methods of using renewable energy, because right now we don't have a perfect one.